

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amendment): A method of restoring phase information on radiation transmitted through an object on the basis of detection data obtained by detecting intensity of the radiation transmitted through the object, said method comprising the steps of:

(a) performing image processing on at least one of first detection data and second detection data obtained by detecting intensity of radiation on plural detection planes at different distances from the object and representing radiation image information on the plural detection planes so as to uniform magnification ratios of said first and second detection data;

(b) correcting blur amount by filter processing using a blur function of spatial frequencies according to a distance from the object for at least one of said first detection data and second detection data obtained by detecting intensity of radiation on plural detection planes at different distances from the object, so as to uniform blur amounts of said first and second detection data representing radiation image information on the plural detection planes, respectively caused by a focal size of a radiation source;

~~(b)~~ (c) obtaining differential data representing a difference between a said first detection data and said second detection data in which the blur amount has been corrected for at least one thereof;

(e) (d) obtaining Laplacian of phase on the basis of said differential data and any one of said first and second detection data before correcting the blur amount and the detection data in which the blur amount has been corrected; and

(d) (e) obtaining phase data of the radiation by performing inverse Laplacian computation on the Laplacian of phase.

2. (canceled)

3. (currently amended): An apparatus for restoring phase information on radiation transmitted through an object on the basis of detection data obtained by detecting intensity of the radiation transmitted through the object, said apparatus comprising:

magnification ratio correcting means for performing image processing on at least one of first detection data and second detection data obtained by detecting intensity of radiation on plural detection planes at different distances from the object and representing radiation image information on the plural detection planes so as to uniform magnification ratios of said first and second detection data;

blur correcting means for correcting blur amount by filter processing using a blur function of spatial frequencies according to a distance from the object for at least one of said first detection data and second detection data obtained by detecting intensity of radiation on plural detection planes at different distances from the object, so as to uniform blur amounts of said first and second detection data representing radiation image information on the plural detection planes, respectively caused by a focal size of a radiation source;

difference processing means for obtaining differential data representing a difference between said first detection data and said second detection data in which the blur amount has been corrected for at least one thereof;

Laplacian processing means for obtaining Laplacian of phase on the basis of said differential data and any one of said first and second detection data before correcting the blur amount and the detection data in which the blur amount has been corrected; and

inverse Laplacian processing means for obtaining phase data of the radiation by performing inverse Laplacian computation on the Laplacian of phase.

4. (canceled)

5. (currently amended): A computer readable medium storing a computer readable program for restoring phase information on radiation transmitted through an object on the basis of detection data obtained by detecting intensity of the radiation transmitted through the object, said program actuating a CPU to execute the procedure of:

(a) performing image processing on at least one of first detection data and second detection data obtained by detecting intensity of radiation on plural detection planes at different distances from the object and representing radiation image information on the plural detection planes so as to uniform magnification ratios of said first and second detection data;

(b) correcting blur amount by filter processing using a blur function of spatial frequencies according to a distance from the object for at least one of said first detection data and second detection data obtained by detecting intensity of radiation on plural detection planes at different distances from the object, so as to uniform blur amounts of said first and second detection data representing radiation image information on the plural detection planes, respectively caused by a focal size of a radiation source;

~~(b)~~ (c) obtaining differential data representing a difference between said first detection data and said second detection data in which the blur amount has been corrected for at least one thereof;

~~(e)~~ (d) obtaining Laplacian of phase on the basis of said differential data and any one of said first and second detection data before correcting the blur amount and the detection data in which the blur amount has been corrected; and

~~(d)~~ (e) obtaining phase data of the radiation by performing inverse Laplacian computation on the Laplacian of phase.

6. (canceled)